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## COSTA RICA.

*Yellow fever in Port Limon during the quarantine season, 1901.*

SIR: During the quarantine season of 1901—that is, from April 1 to November 1, there were 63 cases of yellow fever in Port Limon, Costa Rica, to my personal knowledge. Of these, 45 contracted the disease in Port Limon, and 18 came or were brought from stations on the railroad, distant 2 to 30 miles. These cases occurred by months as follows: April, 1 case; May, none; June, 2; July, 5; August, 26; September, 25; October, 4. About September 15 the heavy and continued rains set in and the mortality rate from all diseases was very much lessened. For instance, there were from all causes 39 deaths from August 15 to September 15, and only 19 from September 15 to October 15.

Of these 45 cases of yellow fever, originating in Port Limon, 20 were natives and 25 Americans and Europeans. The disease appeared in 22 houses or foci, a brief history or description of which follows:

*Focus I.*—A second-class hotel, block No. 43, on accompanying map of Port Limon, 1 one-story building, close to the ground, in a badly drained lot; thence we had case No. 1, April 1, 1901, Englishman; case No. 3, June 16, 1901, Englishman; case No. 30, August 28, 1901, American; case No. 59, October 28, 1901, American; case No. 60, October 3, 1901, American.

*Focus II.*—In the extreme western end of the town,  $7\frac{1}{2}$  blocks, or about 750 yards, from Focus I, on a hill surrounded by shrubbery; rain water, caught in barrels and in a tank, is used for drinking; it is a one-story dwelling house, and here we had case No. 2, June 12, American; case No. 33, August 29, native, wife of an American.

*Focus III.*—One hundred and twenty-five yards north of Focus II, higher up the hill; dense foliage close to the house; rain water used and mosquitoes plentiful; communication between Foci II and III by no means easy, owing to undergrowth and the steep hillside; here we had case No. 4, July 4, American; case No. 5, July 18, American; case No. 9, August 1, American.

*Focus IV.*—Two hundred and sixty yards south of Focus I, a two-story house on the railroad in a low, badly drained spot, mosquitoes plentiful; here we had case No. 6, August 1, native; case No. 11, August 5, native; case No. 10, August 15, native; case No. 35, September 1, native.

*Focus V.*—In the middle of block 17, 60 yards west of the park, 120 yards NE. of Focus IV, and 250 yards south of Focus I, one of several rooms in a long row, partitions going up only partly to the top. Case No. 12, August 8, native. No attempt at disinfection was made at this house, it being impossible from its construction. The room was thrown open and strong winds and bright sunlight allowed to pass through.

*Focus VI.*—City jail, between seawall and park, 160 yards SE. of Focus V, 220 yards S. of E. of Focus IV. The first floor used for prisoners, the second is sleeping rooms for the policemen. Case No. 13, August 9, native; case No. 47, September 20, native.

*Focus VII.*—One hundred yards southeast of Focus I, and in the same block; offices on the ground floor, sleeping rooms above. Case No. 7, August 8, American; case No. 28, August 23, American.

*Focus VIII.*—The United Fruit Company's Hospital, to which most of the yellow-fever patients were carried and put into wards isolated and provided with screened doors and windows; only 1 case originated here, that of a white nurse; all other nurses were negroes. Case No. 51, August 7, Englishman.

*Focus IX.*—In block 35, 15 yards south of Focus III; a two-story house on the hill, surrounded by shrubbery; cistern water used; the house had been vacant for months until occupied by this patient a few days prior to her illness. Case No. 18, August 10, Englishman.

*Focus X.*—Southeast half of the Grand Hotel, a three-story building, one room deep, 300 feet long; attached to this southeast end is the hospital of the Costa Rica Railroad. All cases occurring in this building, whether from Foci X, XVIII, or XX, were in the second story, where mosquitoes were troublesome at times. On the third floor the very strong breezes kept the rooms free of them. Case No. 20, August 16, Englishman; case No. 22, August 17, Englishman; case No. 44, September 12, American; case No. 62, October 4, American.

*Focus XI.*—Custom-house; second floor used as residence; 80 yards east of Focus VI. Case No. 21, August 16, native; case No. 58, September 28, native.

*Foci XII and XIII.*—Thirty yards south of Focus I and about 60 yards west of Focus VII, all in the same block; Focus XII downstairs and to the rear, Focus XIII upstairs and to the front. Case No. 26, August 20, native; case No. 27, August 20, native.

*Focus XIV.*—Twenty-five yards north of Focus V. Case No. 29, August 24, native.

*Focus XV.*—Twenty yards south of Focus VIII. Case No. 37, September 3, native.

*Focus XVI.*—Forty yards northeast of Focus XIV. Case No. 31, August 31, native; case No. 34, September 2, native.

*Focus XVII.*—Sixty yards E. of Focus XVI, 120 yards NW. of Focus X. Case No. 38, September 9, native; case No. 39, September 9, native.

*Focus XVIII.*—Twenty yards SE. of Focus X. Case No. 7, August 1, native; case No. 40, September 6, Englishman.

*Focus XIX.*—One hundred and twenty yards N. of Focus IX. Case No. 42, September 9, American; case No. 43, September 11, American.

*Focus XX.*—Northwest half of Grand Hotel, this with Foci X and XVIII may properly be considered as one building. Case No. 53, September 27, American; case No. 61, October 4, American.

*Focus XXI.*—One hundred and twenty yards N. of Focus XIX and 100 yards W. of Foci I and XII. Case 54, September 24, native.

*Focus XXII.*—One hundred and twenty yards N. of Focus VIII. Case No. 57, September 30, German.

In drawing deductions from the above facts the following should be borne in mind:

Strong western and southwestern land breezes prevail at night, and eastern or sea breezes during the day—much personal intercommunication between the natives is probable, but between them and Americans it is at most very limited.

With few exceptions the patients were removed on the first or second day of illness to the isolated yellow-fever wards of the hospital, and disinfection of the vacated rooms done.

The population of Port Limon is about 4,000, made up of, say, 3,000 Jamaican negroes, who seemed to be immune, and 1,000 Americans, Europeans, and natives of Spanish ancestry. Many of the inhabitants who could give no cause for immunity escaped the disease.

Those physicians having the largest practice and the quarantine officials provisionally, at least, accepted the mosquitoes as a means of propagation of yellow fever and advised the general use of mosquito netting.

The acting assistant surgeon, U. S. Marine-Hospital Service, hav-

January 17, 1902

ing no authority over patients or attendants, all information and observations were by courtesy, and hence at times incomplete.

Respectfully,

D. W. GOODMAN,

*Late Acting Assistant Surgeon, U. S. M. H. S.,  
Stationed at Port Limon, Costa Rica.*

**The SURGEON-GENERAL,**  
*U. S. Marine-Hospital Service.*

CUBA.

*Reports from Santiago, Manzanillo, Guantanamo, and Daiquiri.*

SANTIAGO DE CUBA, December 28, 1901.

SIR: Through the chief quarantine officer for the island of Cuba, I have the honor to submit herewith the following report for the week ended December 21, 1901:

*Santiago.*—During this period there was a total of 20 deaths reported, making the annual rate of mortality for the week 24.18 per 1,000. The causes of death were as follows: Fever, intermittent malarial, 2; tubercle of lungs, 2; cancer of the uterus, 1; diabetes, 1; cerebral congestion and hemorrhage, 4; tetanus, 2; organic disease of the heart, 4; diarrhea and enteritis (under 2 years), 1; Bright's disease, 1; congenital debility, 1; ill-defined causes of death, 1. Total, 20. During the week 6 vessels were inspected and passed, 5 vessels were passed without inspection, and 9 vessels received bills of health prior to leaving port.

On December 15, 1901, the provisional flag steamship *Julia* was disinfected prior to departure for Porto Rico. Two immune and 65 non-immune certificates were issued to passengers and 71 pieces of baggage disinfected by formaldehyd gas.

*Manzanillo.*—Acting Asst. Surg. Richard Wilson reports 10 deaths, making the annual mortality rate for the week 35.95 per 1,000. The causes of death were as follows: Tubercle of lungs, 2; tetanus, 1; pneumonia, 3; diarrhea and enteritis (2 years and over), 3; gangrene, 1. Total, 10.

During the week 4 vessels were inspected and passed on arrival, 3 vessels were passed without inspection, and 4 bills of health were issued to vessels prior to departure.

*Guantanamo.*—Acting Asst. Surg. Luis Espin reports 12 deaths, due to the following causes: Fever, intermittent malarial, 1; tubercle of lungs, 3; cancer of the womb, 1; meningitis, 1; tetanus, 2; pneumonia, 1; diarrhea and enteritis (2 years and over), 1; cirrhosis of liver, 1; Bright's disease, 1. Total, 12. Population, 18,000. Annual mortality rate for the week, 34.66 per 1,000.

During the week 4 vessels were passed without inspection and 2 bills of health issued to vessels leaving port.

*Daiquiri.*—Acting Asst. Surg. Juan J. de Jongh reports 1 death, due to drowning. During the week 3 vessels were inspected and passed on arrival and 2 vessels received bills of health prior to leaving port.

Respectfully,

R. H. VON EZDORF,

*Assistant Surgeon, U. S. M. H. S.*

**The SURGEON-GENERAL,**  
*U. S. Marine-Hospital Service.*